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Title:	**Parking Brake System**		

Informal Draft Listing of Proposed Claim Amendments March 2012

1. (Currently Amended) A parking brake system comprising:

a casing having a hollow bore formed therein;

a parking piston slidably fitted into the casing, said parking piston configured and arranged so that a parking brake state can be obtained by forward movement of the parking piston in the bore in response to a parking control fluid pressure acting on a rear face side of the parking piston, wherein a parking control fluid pressure chamber is formed between the casing and the parking piston for making a parking control fluid pressure act on a rear face of the parking piston;

a lock mechanism provided within the casing to the rear of the parking piston, said lock mechanism configured to automatically lock in response to forward movement of the parking piston in order to mechanically lock the parking piston at a forward position thereof, and to unlock in response to a parking release control fluid pressure acting on the lock mechanism;

a fluid pressure source;

and a fluid pressure controller for controlling a fluid pressure generated by the fluid pressure source so that the parking control fluid pressure and the parking release control fluid pressure can be obtained;

wherein the lock mechanism comprises:

a lock piston that is slidably fitted into the casing to the rear of the parking piston, the lock piston arranged so that at least when the parking piston moves forward a forward urging

force acts on the lock piston and such that a parking release control pressure can act on the lock piston toward the rear, wherein a parking release control fluid pressure chamber is formed between the casing and the lock piston for enabling a parking release control fluid pressure to act on the lock piston toward the rear,

a spring provided in a compressed state between the casing and the lock piston so as to urge the lock piston forwardly in the casing,

a cylindrical retaining tube that is integrally and coaxially connected to a rear part of the parking piston,

a plurality of spheres that are respectively retained at a plurality of positions in the peripheral direction of the retaining tube so as to be movable in a direction along the radial direction of the retaining tube, and

an insertion shaft that is connected integrally to the front end of the lock piston so as to be axially relatively movably inserted into the retaining tube in order to sandwich the spheres between the insertion shaft and an inner face of the casing while contacting the spheres from the inside of the retaining tube, the insertion shaft comprising a small diameter shaft portion on a front side thereof, a tapered portion formed continuously with the small diameter shaft portion, and a large diameter shaft portion formed continuously with the small diameter shaft portion via the tapered portion, said spheres being selectively positionable on any of the small diameter shaft portion, the tapered portion and the large diameter shaft portion, depending on the position of the parking piston;

the casing and the insertion shaft being formed so as to position the spheres radially inward when the parking piston is at a retreat limit, and to position the spheres radially outward when the lock piston moves to a forward position in response to forward movement of the parking piston from the retreat limit,

wherein the insertion shaft has a plurality of guide grooves formed thereon and extending in the axial direction thereof, the guide grooves being provided on the outer face of the insertion shaft, the guide grooves having a concavely curved cross-sectional shape with a diameter that is equal to or larger than the diameter of the spheres so that part of each sphere is rollably fitted into a respective one of the guide grooves, and

the casing having a tapered restricting step provided on the inner face thereof, said restricting step capable of abutting, from the rear, against the spheres pushed radially outward by the insertion shaft when the lock piston is at the forward position thereof,

wherein the fluid pressure controller operates to control supply of the fluid pressure to the parking control fluid pressure chamber and the parking release control fluid pressure chamber and release of residual pressure of the parking control fluid pressure chamber and the parking release control fluid pressure chamber such that, when obtaining a parking brake state, the parking piston is moved forward and thereafter the lock piston is moved forward, whereas when the parking brake state is released, the lock piston is moved rearward and thereafter the parking piston is moved rearward.

2-3. (Canceled)

3. (Currently Amended) The parking brake system of claim 1, wherein ~~the insertion shaft comprises a small diameter shaft portion and a large diameter shaft portion coaxially and integrally connected via a~~ tapered portion of the insertion shaft [[that]] changes the contact position of each of the spheres from the smaller diameter shaft portion to the large diameter shaft portion in response to a forward movement of the lock piston.

4. (Currently Amended) The parking brake system of claim 1, wherein the lock piston integrally includes a small diameter piston portion slidably fitted into the casing and a large diameter piston portion coaxially connected to a rear part of the small diameter piston portion while forming a forward facing annular step between the large diameter piston portion and a rear portion of the small diameter piston portion.

5. (Currently Amended) The parking brake system of claim 4, wherein at least one annular seal is mounted on an outer periphery of the small diameter piston portion of the lock piston and at lest one annular seal is mounted on the outer periphery of the large diameter piston portion of the lock piston.

6. (Currently Amended) The parking brake system of claim 5, wherein the annular seals seal the [[a]] parking release control fluid pressure chamber from opposite sides in the axial direction.

7. (Previously Presented) The parking brake system of claim 1, wherein the casing bore includes a slide hole having a first diameter, which slidably receives a portion of the parking piston, and a guide hole coaxially connected to the slide hole and having a second diameter which is smaller than the first diameter, the guide hole configured to slidably receive the retaining tube therein, wherein a tapered, forward-facing restricting step is formed in the casing bore between the guide hole and the slide hole.